

*C5
cont'd*

69. An image transfer member according to claim 32 wherein the outer release layer is more than 3 micrometers thick.

70. An image transfer member according to claim 33 wherein the outer release layer is more than 3 micrometers thick.

*AB
2
4*

77. An imaging method comprising:

- (a) forming a toner image on an imaging surface;
- (b) transferring the image to an image transfer member according to any one of claims 29-45 or 66-73,75 or 76; and
- (c) transferring the image from the image transfer member to a further surface.

78. An imaging method according to claim 77, and including repeating (a), (b), and (c) utilizing the same image transfer member.

REMARKS

I. Pending Claims

Upon entry of this amendment, the present application will contain claims 29-45, and 66-79. Claim 29 has been amended to recite that the outer release layer is not tacky. Claim 29 has also been amended to recite that the image transfer member is comprised of a base layer and an outer release layer comprised of a condensation cured silicone. The term "comprising" or "comprised of" does not narrow the scope of claim 29. Claims 29, 39-41 have been amended to recite that the condensation "type" silicone is a condensation cured silicone. Claims 30-34 and 66-70 have been amended to make it clear that it is the thickness of the outer release layer that is being referred to. Claims 77 and 78 have been amended to make it clear that intermediate image transfer member is capable of being used for more than one image transfer. No new matter has been added.

II. Election/Restriction

Claims 77-79 have been withdrawn from consideration as being directed to a non-elected invention. According to the Examiner, "Newly submitted claims 77-79 are directed to an invention that lacks unity from the originally-filed claims, as indicated in prior two

Office Actions (Paper Nos. 13 and 16), *i.e.*, the special technical feature of the instant invention does not define a contribution over the prior art. See 37 C.F.R. 1.475.” This restriction is respectfully traversed. Claims 77-79 are dependent on claim 29. Thus, claims 77-79 must define the same technical feature as claim 29 because they contain all of the limitations of claim 29. Therefore, it is respectfully requested that the restriction requirement be withdrawn.

If the restriction requirement is maintained, applicants elect all the pending claims other than claims 77-79.

III. 35 U.S.C. § 112 Rejections

Claims 29-45 stand rejected under 35 U.S.C. § 112, second paragraph, as the phrase “condensation-type silicone” is indefinite. Applicants respectfully traverse this rejection for the following reasons. As evidenced by Shinozaki (U.S. 5,631,119), at col. 7, lines 5-9, “Organosiloxanes are classified as condensation type or addition type depending on the crosslinking method employed. A condensation type silicone rubber undergoes condensation reaction to release water, an alcohol, an organic acid, etc.” Thus, one of ordinary skill in the art would understand that condensation type silicone means a silicone that cures by a condensation reaction to form crosslinks. Applicants have amended claims 29 and 39-41 to recite a “condensation cured” silicone. Therefore, it is respectfully requested that this rejection be withdrawn.

Additionally, in response to the Examiner’s request for product information regarding the silicones used in the invention, Applicants submit a product data sheet for RTV 11 and RTV 41, two examples of condensation cured silicones, which may be used in the invention.

Further, according to the Examiner, claims 42-44 are indefinite as “the exact composition is unclear.” The Examiner queries whether the release layer comprises only a crosslinker/catalyst/conductive material, or does it comprise a crosslinker/catalyst/conductive material and the silicone? If the latter is the case, it is suggested that applicant use the language “further comprising” instead of the term “comprising.”

In response to this rejection, Applicants direct the Examiner’s attention to MPEP § 2111.03, wherein it is stated that the phrase “comprising” is inclusive, or open-ended and does not exclude additional, unrecited elements or method steps. Claim 29 recites “An intermediate image transfer member suitable for receiving an image from an imaging surface

as further comprising
as further comprising
as further comprising
as further comprising
as further comprising

and transferring it to a substrate, said image transfer member comprising a base layer and an outer release layer comprised of a condensation cured silicone..." Thus, claim 29, including the outer release layer, should properly be construed to be open to additional ingredients, such as, crosslinker, catalyst and conductive material. Claim 42 is dependent on claim 29. Thus, claim 42 must further limit claim 29, *i.e.*, claim 42 contains all of the limitations of claim 29 and the further limitation that the release layer comprises crosslinker. Therefore, it should be clear that the release layer of claim 42 comprises a condensation cured silicone and a cross linker. Similarly, claim 43 is dependent on claim 29 and thus claim 43 contains the limitations of claim 29 and the further limitation that the release layer comprises catalyst. Claim 44, which is dependent on claim 29, contains all of the limitations of claim 29 and the additional limitation that the release layer comprises conductive material.

Claim 45, which depends from claim 29, was included in the § 112, second paragraph rejection, but the basis for the rejection was not stated. However, in the previous Office Action, which has been vacated, it was stated that "the use of the term 'including' renders the claim ambiguous. According to the MPEP §2111.03, the term "including" is synonymous with "comprising." Therefore, it is respectfully submitted that the term "including" is synonymous with "comprising" and thus it is not ambiguous.

Claims 43 and 74 stand rejected under 35 U.S.C. §112, second paragraph since the believes that the meets and bounds of the claim are not clear. Applicants respectfully traverse this rejection.

Applicants submit that for each silicon polymer precursor material that are one or more cross-linker materials that are recommended. For each such combination there is a recommended ration between the cross-linker and the precursor material. This is the normal amount referred to. As such, the terms used in the claims are not indefinite, since a person of ordinary skill in the art would understand, based on the specification sheets and common knowledge what are the normal amounts of cross-linker to be used.

For the foregoing reasons and in view of the above amendments, applicants submit that pending claims 29-45 and 66-79 comply with 35 U.S.C. §112, second paragraph. Thus, applicants respectfully request that the rejections be withdrawn.

IV. Rejections over the art

(A) Claim 29 stands rejected under 35 U.S.C. §102(b) as anticipated by the abstract of JP 57-019753 to Namiki.

As a preliminary matter, applicants submit information regarding the contents of this reference that it received from a Japanese associate in response to two questions.

Question 1- The application appears to describe the possibility of using a condensation type silicone rubber or varnish which is made tacky by adding silicone oil and a tackifier. Is this a correct understanding of the application?

Response to Question 1. The application describes, as a tackifier added to the two component addition type liquid silicone raw rubber, which is a base material of a tacky layer, one or two component condensation type silicone varnish or silicone oil having a viscosity of 10,000 cs or more.

Question 2-Does the application mention anywhere the thickness of the tacky layer?

Response to Question 2. The application describes: The thickness of the tacky layer is suitably 5 micron or more. The thickness of the tacky layer in Example 1 is 100 microns.

This information is submitted to insure full disclosure of the applicants' knowledge of the reference.

Namiki discloses an intermediate transfer member having a silicone tacky layer comprising silicone rubber containing a tackifier. The silicone release layer of claim 29 does not contain any tackifier and therefore the silicone release layer is not tacky. Applicants submit the Declaration of Marc Aronhime, the first named inventor of the present application, attesting to the fact that the outer silicone release layer of the described invention does not contain a tackifier. Claim 29 and the disclosure have been amended to reflect this fact.

Because the silicone layer of Namiki is necessarily tacky, and that of the claimed invention is inherently not tacky, Namiki cannot anticipate claim 29 or claims dependent therefrom. Therefore, Applicants respectfully request that this rejection be withdrawn.

(B) Claims 29-38 stand rejected under 35 U.S.C. §102(b) as anticipated by Shinozaki (US 5,631,119)

(C) Claims 29-45 and 66-76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hendrickson (4,600,673).

(D) Claims 29-45 and 66-76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Imai et al. (4,074,001).

Applicants respectfully traverse these rejections and request reconsideration of the rejections and allowance of the claims. Applicants further submit that the independent claims (and thus the claims dependent on them) are not *prima facie* anticipated or obvious (as the case may be) in view of the art cited for the reasons given below. In addition, further reasons for some of the dependent claims not being *prima facie* anticipated or obvious are given in the following portion of these remarks.

None of the prior art references (except possibly for Namiki which has been distinguished by amending claim 29) provide a *prima facie* case of anticipation or obviousness, since there is no indication that they are "suitable for the transfer of toner images received from a first surface and transferring them to a second surface."

Furthermore, the Examiner has not provided any rationale why the apparatus shown in the prior art should be suitable for such transfer.

In the Examiner's response, the Examiner has stated that "The phrase 'suitable for the transfer of toner images from a first surface and transferring them to a second surface' is considered language of intended use, which is not dispositive of patentability." The Examiner's position in this regard is respectfully traversed.

According to the MPEP § 2173.05(g),

A functional limitation must be evaluated and considered, just like any other limitation of the claims, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.

The language "suitable for" is not an intended use, it is a functional limitation that distinguishes the claims from the image forming member of Shinozaki and Hendrickson and the fixer roll of Imai et al., because, as discussed below, they are not suitable for the transfer of toner images received from a first surface and transferring them to a second surface. In order for the prior art to anticipate or render obvious the claimed invention, it must teach or

OK
functional limitation
not intended use

fairly suggest each limitation of the claim, including the limitation that the intermediate image transfer member is “suitable for the transfer of toner images received from a first surface and transferring them to a second surface.” Applicants respectfully submit that the prior art does not teach or suggest that the photoreceptors of Shinozaki or Hendrickson or the fixing roll of Imai et al., are suitable for transferring toner images received from a first surface and transferring them to a second surface. Nor has the Examiner provided any explanation as to where this limitation is disclosed in the prior art. Thus, the rejections should be withdrawn.

Applicants enclose a decision of the Board of Appeals in Appeal No. 2001-0252, corresponding to application number 08/760,652. A copy of Applicants' Brief in this case is also enclosed. This decision (although not precedential), does show that the Board of Appeals does take the same position as applicants.

Applicants believe that, at this point, a brief summary of the art and its relevance (or lack thereof) to the present invention would be helpful to further show that the claims are not *prima facie* anticipated or obvious.

(A) The rejection over Shinozaki

Shinozaki discloses a method of producing a printing plate in which portions of an outer silicon layer are removed from the surface so that the underlying portions can be used for lithographic printing. The image is thus produced on the plate (after removal of the silicone layer from a portion of the surface). Such a device is not suitable for transfer of a toner image, since the toner image, *if* it could be transferred to and from the device would certainly not be transferred evenly.

Shinozaki does not disclose an image transfer member suitable for the transfer of toner images received from a first surface and transferring them to a second surface. Rather, as indicated, Shinozaki is directed to a method of producing a printing plate. The printing plate is produced on an assembly comprising: (1) a support layer; (2) a photosensitive layer; and (3) a water-soluble higher molecular compound layer or a silicone rubber layer.

As the Examiner recognizes, Shinozaki discloses that the silicone rubber is removed on the un-typed areas of the silicone rubber layer (see col. 13, lines 1-6). The image forming material (photoreceptor) disclosed in Shinozaki is not suitable for transferring an image received from an imaging surface to a final substrate, because the silicone rubber layer is

partially removed during the second transfer. Thus, on a second use, the member will be uneven and may not be received from the imaging surface on the portions where there is no silicone. Furthermore, there is no indication from any of the prior art that such a material would be at all useful in an image transfer member, i.e., that it could be used successfully to receive images from a first surface and transfer them to a second surface. Applicants submit that in any event, the material is so thin and admittedly unstable that no person of the art would have utilized it for an image transfer member.

As to the dependent claims, claim 34 and 68-70 define coating thicknesses that are not only outside the range of Shinozaki, but which might be considered by a person of ordinary skill in the art to render Shinozaki inoperable. Shinozaki is based on partial or complete transfer of the topcoat. The patent teaches a thickness of 0.3 to 3 microns (col. 7, lines 66-67). In the examples, the thickness is less than or equal to 1 micron. The claims noted above specify much thicker layers.

As to the rejection of claims 35-38, the reference is silent as to the presence of silicone oils. In order to anticipate, the reference must be unequivocal in its teaching. Silence on a claimed limitation negates the possibility of anticipation.

(B) The rejection over Hendrickson

Hendrickson discloses photoconductive assemblies on which an image is formed and from which the image is transferred to a further substrate. The assemblies comprise, *inter alia*, a support coated with a photoconductive layer; and a very thin layer of cured silicone polymer on top of the photoconductive layer. First a latent image is formed on the photoreceptor (the imaging surface). The latent image comprises areas at different voltages (potentials). A visible image is formed by contacting the latent image with charged colored toner particles. The visible image is then transferred from the photoreceptor to a final substrate utilizing heat, using direct transfer. During this transfer, as indicated at col. 8, line 6, the silicon layer is partially or fully removed during transfer, for both transfer methods disclosed. Such a device in which the coating is destroyed during each transfer process would not be useful for an image transfer member.

According to the Examiner, "It is also important to note that partial transfer of the Hendrickson silicone layer only occurs when flash/pressure transfer is used on the Hendrickson article. In the other, thermal transfer method, no transfer of the silicone resin

takes place. See col. 7, lines 44-60." This is incorrect. Hendrickson et al. disclose that "In either method [thermal transfer or flash/pressure transfer], the silicone polymer is partially or totally removed from the photoconductive assembly as a result of the transfer step." See col. 8, lines 6-8.

As to the Examiner's rejection of the dependent claims over Hendrickson, Applicants note that while the Examiner has rejected all of the claims over Hendrickson, he has indicated reasons for the rejection for only some of the claims. Thus, no *prima facie* case has been set out for the Examiner arguments as to claims 66-70. Hendrickson describes a plate making device. He describes a thickness of 5 to 300 nanometers for the topcoat. This thickness is designed so that it is easily removed. Further he says that the thickness is critical and that 300 nanometers is the upper useful limit. (col. 5, lines 51-59) Use of an excess amount of cross-linker should result in the excess remaining in the final product. As to claim 75, the Examiner has not shown any motivation for adding carbon to the fixing roller of the prior art. The effect would be as described by the Examiner, however, there is no teaching that such effect is desirable in the reference. As to claim 76, the lack of suitability of the references and the patentable effect of the limitation have been described above.

(C) The rejection over Imai

Imai discloses a fixing roll. Such a roller is used to fuse a toner image that has already been transferred to a substrate and to fix it to the substrate. It does not transfer an image at all. In fact it is important that it be designed so that an image does not transfer to it during the fusing, since this would ruin the image. There is no indication that the Imai device, which is designed to avoid transfer thereto, would be suitable as an image transfer member. Furthermore, in order to function as a fixing roll with satisfactory performance, Imai discloses that the condensation cured silicone layer must contain from 10 to 80 parts by weight of fillers. This high level of filler makes the fixing roll hard and unsuitable as an image transfer member. Thus, Imai et al. cannot render claim 29 obvious.

According to the Examiner, "Imai discloses a fixing roll comprising a substrate and a coating thereon, wherein the coating comprises a diorganosiloxane terminated at both chain ends with diorganohydroxysilyl groups. See col. 2, lines 3-5 and 46-50. This diorganopolysiloxane is a preferred example of a condensation-type silicone, as indicated in the specification on p.22."

This rejection is respectfully traversed. Imai discloses a fixing roll, not an image transfer member. As discussed above, a fixing roll is used to fix an image after it has been transferred to a substrate. Moreover, the fixing roll disclosed in Imai is not suitable for receiving toner images from a first surface and transferring them to a second surface because it is too hard and too thick. In order to function as a fixing roll with satisfactory performance, Imai discloses that the condensation cured silicone layer must contain from 10 to 80 parts by weight of fillers. This high level of filler (corresponding to 9 % to 44% fillers), considered critical by Imai, makes the fixing roll hard and may make it unsuitable as an image transfer member. Thus, Imai et al. cannot render claim 29 obvious.

The Examiner has indicated that claims 30-45 and 66-76 are also unpatentable over Imai. However, the Examiner has not given reasons for most of these claims. In particular, the Examiner has not indicated why the limitations of claims 30-45 65, 66 are obvious.

Imai et al. cannot render obvious claims 39-41 because Imai et al. teach away from a condensation cured silicone release layer that contains less than 4 % by weight filler (claim 39), less than 1% filler (claim 40) and less than 0.1% filler (claim 41). Indeed, Imai et al. disclose that: "Further, the suitable amounts of the fillers [(D), (E) and (F)] in the desired composition are all from 10 to 80 parts by weight of component (A) [the condensation cured silicone]. No fixing roll with satisfactory performance can not be obtained when those filler components are used in amounts outside of the above range. [emphasis added]". (Col. 5, lines 33-38) Since Imai teaches the specific importance of the percentage of fillers, Imai et al. teach away and cannot render obvious, claims 39-41.

Additionally, claims 30-34 and 66-70 are patentable over Imai et al. because claims 30-34 all recite that the thickness of the condensation cured silicone layer is less than 1 mm. Specifically, claim 30 recites a thickness less than 1 mm; claim 31 recites a thickness of less than 0.2 mm; claim 32 recites a thickness of less than 0.1 mm; claim 33 recites a thickness of less than 0.05 mm; claim 34 recites a thickness of between 0.003-0.015 mm; and claim 66 recites that the thickness is between 7 and 8 microns. Claims 66-70 are dependent on these claims and further restrict the thickness. In contrast, Imai discloses:

The thickness of the layer of the room-temperature-vulcanizing silicone rubber composition provided on the fixing roll surface is at least 1 mm, or preferably a few millimeters." [emphasis added].

Thus, the disclosure in Imai et al., that the silicone rubber layer is at least 1 millimeter and preferably a few millimeters in thickness, teaches away from claims 30-34 and 66-70, which all require that the condensation cured silicone release layer is at least less than 1 millimeter in thickness. Thus, Imai et al. cannot render obvious claims 30-34 and 66-70.

Furthermore, Imai, et al does not teach that the catalyst is present in excess in the outer release layer. It is most unusual to provide an excess of catalyst.

Nor does Imai et al. render obvious any of claims 35-38, 42-45, 67-73, 75 and 76 at least because of their dependency from claim 29. For the foregoing reasons, Applicants respectfully request that the rejection be withdrawn.

When an image transfer member is used, it receives the image from the photoreceptor (first transfer) and transfers it to a substrate (second transfer). In certain instances, especially when a liquid toner is used, the image transfer member is heated and during the second transfer, the image is fused to the substrate.

A photoreceptor only has to release the image. A fuser does not receive an image. The requirement is that it not stick to the toner (which is tacky and maybe molten when the fuser touches it). In contrast, the functionality of the claimed image transfer member is much more complex. First, it must receive the image from the photoreceptor (which is cold), while the image transfer member may be hot. Then it has to transfer the image to a further surface. Thus, unlike a photoreceptor or a fixing roll, an image transfer member must be able to both receive an image from a first surface and transfer the image to a second surface.

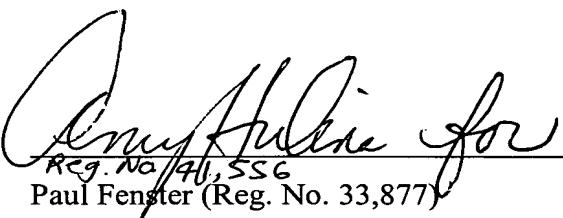
Not only has the Examiner provided no rational for these references teaching a member suitable for the transfer of toner images, the differences in function (except for Namiki) and the lack of suitability required by the claim make the references irrelevant.

VIII. Conclusion

For all of the foregoing reasons, Applicants submit that the pending claims are patentable over the prior art of record and allowance of this application is respectfully requested.

Dated: Dec. 18, 2001

By:



~~REG. NO. 71,556~~
Paul Fenster (Reg. No. 33,877)

KENYON & KENYON
1500 K St. N.W.
Washington, D.C., 20005
(202) 220-4200 (telephone)
(202) 220-4201 (facsimile)

Version with Markings to Show Changes Made to the Specification and Claims

Please replace the paragraph at page 4, lines 20-23 with the following paragraph:

There is further provided in accordance with a preferred embodiment of the invention an image transfer member suitable for the transfer of toner images and having [an] a non-tacky outer release coating of a condensation type silicone.

29. (Twice Amended). An image transfer member suitable for the transfer of toner images received from a first surface and transferring them to a second surface, [having] comprising a base layer and a [an] non-tacky outer release layer comprised of a condensation [type] cured silicone.

30. (Once Amended). An image transfer member according to claim 29 wherein the outer release layer has a thickness of less than 1 mm.

31. (Once Amended). An image transfer member according to claim 29 wherein the outer release layer is less than 200 micrometers thick.

32. (Once Amended). An image transfer member according to claim 29 wherein the outer release layer is less than 100 micrometers thick.

33. (Once Amended). An image transfer member according to claim 29 wherein the outer release layer is less than 50 micrometers thick.

34. (Once Amended). An image transfer member according to claim 29 wherein the outer release layer is between about 3 and about 15 micrometers thick.

39. (Twice Amended). An image transfer member according to claim 29 wherein the condensation [type] cured silicone contains less than 4 % filler material.

40. (Twice Amended). An image transfer member according to claim 29 wherein the condensation [type] cured silicone contains less than 1% filler material.

41. (Twice Amended). An image transfer member according to claim 29 wherein the condensation [type] cured silicone contains less than 0.1% filler material.

66. (Once Amended). An image transfer member according to claim 34 wherein the outer release layer is between about 7 and about 8 micrometers thick.

67. (Once Amended). An image transfer member according to claim 30 wherein the outer release layer is more than 3 micrometers thick.

68. (Once Amended). An image transfer member according to claim 31 wherein the outer release layer is more than 3 micrometers thick.

69. (Once Amended). An image transfer member according to claim 32 wherein the outer release layer is more than 3 micrometers thick.

70. (Once Amended). An image transfer member according to claim 33 wherein the outer release layer is more than 3 micrometers thick.

77. (Once Amended). An imaging method comprising:

(a) forming a toner image on an imaging surface;

(b) transferring the image to an image transfer member according to any one of claims 29-45 or 66-73,75 or 76; and

(c) transferring the image from the image transfer member to a further surface.

78. (Once Amended). An imaging method according to claim 77, and including repeating [forming a transferring] (a), (b), and (c) utilizing the same image transfer member.